Assignment 2-4 Armstrong Numbers

An Armstrong number is a positive integer that is the sum of its own digits each raised to the power of the number of digits. For example, 153 is an Armstrong number because $1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153$. Likewise, 1634 is an Armstrong number because $1^4 + 6^4 + 3^4 + 4^4 = 1 + 1296 + 81 + 256 = 1634$.

In this problem you have to determine whether a given positive integer is an Armstrong number or not.

Input

The input consists of t ($30 \leq t \leq 40$) test cases. The first line of the input contains only positive integer t. Then t test cases follow. Each test case consists of exactly one line with a positive integer n which is less than 2^{31}.

Output

For each line of input, there will be one line of output. If n is an Armstrong number print 'Armstrong', otherwise print 'Not Armstrong' (without the quotes).

Sample Input

2
153
154

Sample Output

Armstrong
Not Armstrong